Production and Marketing of Wood Piling and Poles in the Northeast

by

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Station Paper No. 57

Northeastern Forest Experiment Station

Upper Darby, Pennsylvania
Ralph W. Marquis, Director

1953

United States Department of Agriculture • • • Forest Service

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INTRODUCTION

SINCE THE EARLIEST colonial settlements along the northeastern seaboard, wood piling has been used for wharves and piers and other waterfront structures. As waterside industries and waterborne commerce grew, the demand for wood piling grew.

Wood piling was also put to use throughout the Northeast in bridges and for foundations of buildings, storage tanks, and other heavy structures. Besides such new construction, the need for replacing old marine piling has kept the demand for piling alive.

At first, piling was obtained near where it was used. But as demand grew and nearby supplies of suitable timber shrank, the main sources of supply moved farther and farther away. By 1951 the Northeast was producing only 70 percent of the piling it needed, and had to import the rest from other regions.

Development of the telegraph, the telephone, and electric power created a new demand for round timbers--util-

ity poles. Today about $16\frac{1}{2}$ million poles support the vast networks of wires and cables that serve the Northeast. Although use of wood poles has declined in urban areas, the increase in rural electrification has kept up the demand for poles.

The first utility poles used in the Northeast were cut from oak, chestnut, and white-cedar[1] in nearby forests. But chestnut was lost to the blight, and oak was too heavy for the longer poles that were soon needed. And although cedar is still the leading pole species in the Northeast, it supplies only a small part of the poles used. Today the Northeast produces only about $3\frac{1}{2}$ percent of the 888,000 poles it uses annually.

PILING

PRODUCTION

Piling production in the Northeast in 1951 was estimated at 6,345,000 linear feet. Production by species and subregions is shown in table 1.

Table 1.--Piling production in the Northeast, by species, 1951[1]

(In thousands of linear feet)

State or subregion	Oak	Southern pine[2]	Spruce	Red pine	Others[3]	Total
New England[4]	175	--	395	260	45	875
New York	345	--	25	50	70	495
New Jersey	450	130	--	--	20	600
Pennsylvania	330	--	--	--	30	360
Delaware	175	600	--	--	25	800
Maryland	515	2,570	--	--	65	3,150
West Virginia	70	--	--	--	--	70
Total	2,060	3,300	420	310	255	6,345

[1]From production estimates by U. S. Forest Service in connection with equipment-manpower survey of primary forest-products industries, 1950-1951.

[2]Includes loblolly, pitch, and shortleaf pines.

[3]Ash, beech, birch, gum, hickory, maple, yellow-poplar, cedar, hemlock, tamarack, and white pine.

[4]80 percent produced in Maine and New Hampshire.

[1]Mainly northern white-cedar (Thuja occidentalis), but also includes some Atlantic white-cedar (Chamaecyparis thyoides).

Figure 1.--Only straight, well-formed trees are selected for use as piling or poles. This stand of tall loblolly pines is in Maryland, which supplies more than 40 percent of the piling produced in the Northeast.

Maryland is the principal source of piling in the Northeast. In 1951 it accounted for more than 40 percent of the region's piling production.

In general, piling production is a part-time operation for all but a few of the larger producers. Most of the producers are sawmill operators who cut piling as a sideline. When market conditions are favorable, trees suitable for piling are cut as such. When prices and demand decrease, potential piling trees are either cut into sawlogs or left standing.

Logging

Normally, the producer begins to log piling only when he receives an order. The typical piling operation is carried on by a crew of four to six men, including truck driver, tractor operator, and two or three cutters who do the felling and limbing. Loading is usually done by the tractor operator. If piles are to be peeled, several additional men are employed for this work. When the hauling distance is long, one woods crew of four or five men can keep two trucks busy.

Felling crews have to be experienced, especially if they select the trees to be used for piling. Although more than half the piling produced in the Northeast is cut from farm forests, very little of the woods work is done by full-time farmers or farm help.

Piling up to 65 feet long can usually be produced locally. Some southern pine piles longer than this are produced in the Del-Mar-Va Peninsula. But, in general, 70-foot and longer material comes from the South or from the West Coast.

Treating

About 15 percent of the piling produced in the Northeast is treated with preservatives. Such piling must first be peeled. Treating plants prefer to have the producers do this. But because of lack of woods labor, they are forced to accept more and more unpeeled material. However, if peeling is done in the woods during the peeling season, it is not a difficult job. And peeled piles bring a premium of 4 to 6 cents per linear foot.

The producer delivers the material by tractor-truck to the place of use or to the wood-preserving plant. Rail shipments of untreated piling are unusual. But treated piling, if the distance is long, is usually shipped by rail.

Figure 2.--A piling operation in Maryland. Above, peeled piling is skidded out of the woods by tractor.

Below, a tractor-powered boom is used to load pine piling onto a truck. Piling and poles are generally transported from the woods to railhead, wood-preserving plant, or user.

M A R K E T S & M A R K E T I N G

Principal Markets

Piling is usually sent to the nearest market. However, the Maryland-Delaware producing area sends material to all the major markets in the Northeast.

The largest market for piling in the country is the New York City metropolitan area. About 100,000 piles (4 million linear feet) are used annually in this industrial area. This amounts to more than 10 percent of the total National requirements.

Most of this piling is marketed through dealers and brokers (including wood-preserving plants) located in or near New York City. Only a few of the larger piling producers who serve this area deal directly with the consumer.

Markets exist also in Philadelphia, Wilmington, and Baltimore. In these cities most piling is handled through dealers and wood-preserving plants. In Philadelphia, however, untreated piling is sold directly to the user by the producer. Most of the piling for this market comes from eastern Pennsylvania, New Jersey, Maryland, and Delaware.

In New England, some piling is used in the seaports, notably Boston and Providence. Here piling users deal directly with New England producers except when longer lengths (50 feet or more) are needed. These are supplied by dealers in New York City.

Along the Great Lakes and the St. Lawrence River, minor piling markets exist. Most of the piling used in this area is treated; it originates in the New Jersey-Maryland area or outside the Northeast. Some untreated material is produced in the Great Lakes area.

These concentrated markets account for approximately 80 percent of the piling demands of the Northeast. In addition there is a sporadic demand for bridge- and building-foundation piles throughout the region. But steel and concrete are gradually forcing wood out of this market.

To fill the demands of these markets, about 65,000 pieces of southern pine and western fir are imported into the Northeast every year. The rest is produced from the Northeast's own forests.

Piling producers and dealers seldom carry large inventories. Even treating plants keep relatively small stocks on hand for immediate delivery.

There are several reasons for this. First, handling costs are kept to a minimum. Second, the market is not steady. When new pile-supported structures are going up, demand for piles is great; but when construction slacks off, so does the demand for piling. Third, piling specifications vary greatly as to species, length, and diameter; so it is much more convenient to cut the piling to order. And finally, many pile-driving contractors prefer untreated piling to be green when driven.

Specifications

Specifications for round-timber piling have been published by the American Railway Engineering Association, the Association of State Highway Officials, and the American Society for Testing Materials.[2] These specifications cover species, quality, dimensions, tolerance, manufacture, inspection, and shipment.

In general, to be suitable for piling, trees must be straight, strong, and shock-resistant in order to withstand driving and to carry the weight of structures built on them. Decay-resistance or ease of impregnation with preservatives are also important except in piles for temporary use or piles entirely submerged in water free of marine organisms.

Some users prefer winter-cut piling, holding that insect and fungus damage is less likely during cold weather.

The dwindling supply of more desirable species and longer material has caused a gradual relaxation in specifications governing species and diameters. Users are forced to accept smaller top diameters in order to obtain suitable lengths. Preservative treatment now makes species with low decay-resistance acceptable. Although white oak is still preferred for waterfront installations, treated red oak is frequently substituted.

Where high strength is required, oak, pine, and spruce are the principal species used for piling. Species such as hemlock, yellow-poplar, gum, elm, birch, and maple are used where strength or durability requirements are not exacting.

The advantages or disadvantages of different species, treated vs. untreated material, or wood vs. concrete and

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[2] Anonymous. Standard specifications for round timber piles. Amer. Soc. Testing Materials D25-52T.

steel piles will not be discussed in detail in this report. However, piling users, building contractors, and inspectors of marine installations say that there is a proper use for each type of piling material. The situation can be summed up briefly as follows:

- Untreated wood piles are usually satisfactory for marine installations and foundation work, provided they are completely submerged in water at all times or below the ground-water level. Water must be free of marine borers.

- Treated wood piles are strongly desirable for marine installations in waters infected by marine borers. They are desirable--and often required by building codes--for foundation piles not completely submerged below ground-water level.

- Mixed hardwood piles (generally of less strength or durability than oak) are satisfactory as foundation and temporary piles where load-bearing demands are light or length of life is not important.

- Steel and preformed concrete and steel piles are desirable wherever extremely heavy load-bearing demands are encountered, or exceptionally long material is necessary. (Steel H-beam and concrete piles can be extended by welding or pouring additional concrete mix.)

Prices

Piling prices depend upon length of material and market conditions. Species, location, quality, and stand density also affect prices. The shorter pieces of piling bring little premium over saw timber. But long, straight material suitable for piling is scarce; so such material brings a higher price per linear foot.

In some parts of the Northeast (especially in the Del-Mar-Va Peninsula) piling operators are being forced to buy all the merchantable timber in a stand. Owners feel that they do not receive a fair price for a residual stand after the piling has been cut.

Because piling stumpage is generally sold along with other merchantable timber, it is difficult to estimate accurately the stumpage value of the piling trees. Moreover, the way piling is measured and sold differs somewhat among the producing areas.

Only in northern New England is piling stumpage sold by the board foot. The product is usually measured after it is cut.

In the rest of the Northeast piling stumpage is sold by the linear foot, by the piece, or on a lump-sum basis with saw timber. Lump-sum sales are most common in New York, Maryland, and Delaware.

Piling resold at the roadside or delivered to point of use is usually sold by the linear foot, the price per foot increasing with total length of the pile. Price paid for delivered material is usually the price set by the operator (plus brokers' fees or dealers' mark-up if the piling moves through these channels). Because of differences in types of logging operations, location, size, and composition of timber stands, prices demanded by two different operators for similar material may be quite different.

Table 2 is a summary of sample price information broken down by the major producing areas. This information was obtained from state forestry agencies and piling operators throughout the Northeast. It is difficult to list an accurate range of prices for such material because of changes in market conditions and variations in stumpage quality, location, and the like.

Table 2.--Some typical piling prices in the Northeast, 1951

State	Species	Size of material		Prices			
				On the stump			Delivered
		Length	Top diameter	Per M board feet[1]	Per linear foot	Per piece	Per linear foot[2]
		Feet	Inches	Dollars	Cents	Dollars	Cents
Maine, New Hampshire, and Vermont	Spruce, pine, and oak	25-50	6	15-25	--	--	20-45
Massachusetts, Rhode Island, and Connecticut	Oak and hickory	25-50	6	--	6-12	--	25-50
New York	Oak	40-60	6	--	--	2.50-5.50	25-45
New Jersey and Eastern Pennsylvania	Oak	40-60	6	--	7-20	3-5	25-45
	Pitch and shortleaf pine	30-50	6	--	7-12	--	18-25
Maryland and Delaware	Oak and hickory	25-50	5-6	--	7-20	3-10	25-80
	Loblolly and shortleaf pine	18-60	6-8	--	6-20	--	15-40

[1]Local log rule.

[2]Unpeeled. Prices for peeled material are 4-6 cents higher per linear foot.

It is also difficult to compare piling prices directly with sawlog prices, because the log rules used vary from state to state. In Maine the Maine or Holland log rules are used; in New Hampshire the Blodgett caliper rule (11.5 Blodgett feet per 1,000 board feet) and the International $\frac{1}{4}$-inch rule; in Vermont the Vermont rule (one-half diameter) and the International; in New York the Doyle rule; in New Jersey and Pennsylvania the Doyle rule or some modification of it; and in Maryland and Delaware the International, Doyle, Scribner Decimal-C, or Vermont rules.

Producers and dealers generally figure on 2 to 4 board feet per linear foot of piling. But the ratio varies with the log rule as well as with diameter and length.

For example, in scaling a 40-foot pile with 6-inch top and 14-inch butt diameter, the average linear foot of pile would be scaled to contain 2.0 board feet by the Scribner rule, 2.25 board feet by Doyle, 2.9 by International, 3.15 by Maine or Holland, 3.2 by Vermont, and 3.4 by Blodgett.

For piles of 6-inch top diameter, the board-foot-linear foot ratio will increase by about $\frac{1}{4}$ board foot for every 5-foot increase in length of pile.

Comparisons in terms of cubic feet can be made more easily.[3] The average pile produced in the Northeast contains about 0.6 cubic foot per linear foot.

FISH-NET POLES

A relatively small but locally important sideline of piling production in the Northeast is fish-net poles. These poles are used to support pound and gill nets used by commercial fishermen.

Demands for this material vary with weather conditions and fish abundance, but it is estimated that approxi-

[3]Cubic-foot volume can be computed from the cone-frustrum formula

$$V = 0.2618\ L\ \frac{d^2 + D^2 + dD}{144}$$

in which V is cubic-foot volume, L is length in feet, d is top diameter in inches, and D is butt diameter in inches.

mately 10,000 such poles (30 feet and longer) are produced and used annually in the Northeast. These poles are used in the Atlantic coastal waters, in the larger fresh-water lakes, and in the larger tidal rivers.

Most of this material is produced in southern New England, southeastern New York, New Jersey, Maryland, and Delaware. Fish-net poles are usually delivered directly to the user by the producer. Prices for stumpage and delivered product are about the same as for oak piling of comparable size.

UTILITY POLES

PRODUCTION

In spite of the fact that the Northeast falls far short of supplying its pole needs, pole production in the region has declined rapidly. Less than 10 years ago northern Maine produced about 30,000 cedar poles annually. Today production is down to 12,000 pieces and expected to decrease further. There are several reasons for this:

- Treated southern pine and western cedar poles last longer than untreated northern white-cedar.

- Longer poles are needed because of greater minimum line-clearance standards and because two or more utility companies often use one series of poles jointly.

- Pine poles are generally trimmer in appearance, are easier to climb and easier to handle.

- The best northern white-cedar poles have been cut out on the more accessible sites. Remaining good cedar stands are relatively inaccessible, and production costs are high.

In 1951 about 40 percent of the utility poles produced in the Northeast came from the white-cedar section of northern Maine. Some poles are also produced in the rest of northern New England, northern New York, eastern Maryland, and Delaware. Production estimates by species and states are shown in table 3.

The bulk of the cedar stumpage in northern Maine is controlled by pulp and paper companies and large non-

industrial owners. Very few of these owners carry on pole operations themselves. They usually sell stumpage to pole-producing operators.

In contrast to its high rank in piling production, Maryland's utility-pole production is of minor importance. Local producers and dealers offer these reasons for this situation: (1) lack of suitable pole stumpage; (2) lower price generally paid for poles than for piling cut from same size trees; and (3) lack of skilled pole-cutting operators in the area.

Logging

Pole-producing operations in the Northeast range from small, year-around operations in Maryland to larger winter operations in the cedar swamps of northern Maine. Both red (Norway) pine and loblolly pine poles are often produced in connection with piling operations for the same species. Cedar-pole production in New Hampshire, Vermont, and New York is often a sideline of post operations. In northern Maine, however, operations are either limited to pole production or are carried on in connection with pulpwood operations.

With the exception of northern Maine production, many pine poles originate on farm forests. But, as in the case of piling, very little of the logging is done by farmers. Most pole operators are engaged in some sort of woods or milling operations year around. Size of woods crew, equipment, and techniques are similar to those employed on piling operations. Poles are generally peeled in the woods or at loading point by the producer.

Table 3.--Pole production in the Northeast, 1951

State	Volume by species				Treated
	Cedar	Red (Norway) pine	Loblolly[1] pine	Total	
	Pieces	Pieces	Pieces	Pieces	Percent
Maine	12,000	7,000	--	19,000	37
Maryland	--	--	3,000	3,000	100
New Hampshire and Vermont	2,000	3,000	--	5,000	60
New York	3,000	--	--	3,000	0
Total	17,000	10,000	3,000	30,000	47

[1]Includes small amounts of pitch and shortleaf pine.

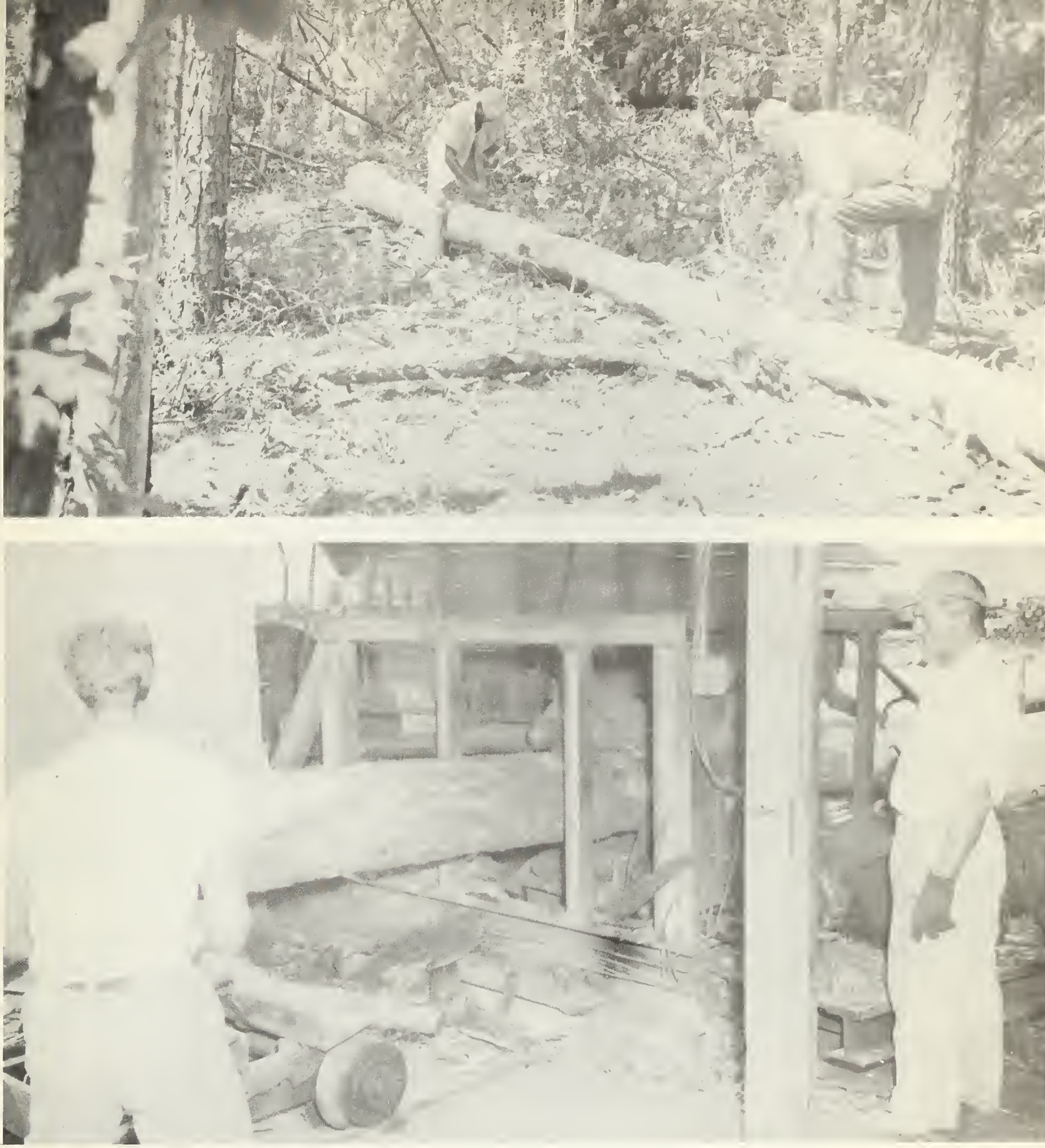

Figure 3.--Peeled piling and poles generally command better prices than unpeeled material. During peeling season, some peeling is done in the woods, by hand.

Some peeling is done by machine. Below, a pole is peeled at a wood-preserving plant.

Treating

Only 10 percent of the white-cedar poles are treated with preservative. The few that are treated receive only butt treatment. Pine poles, on the other hand, are pressure-treated full-length.

Less than half of the poles produced in the Northeast receive preservative treatment. This is considerably below the national average of 85 percent.

MARKETS & MARKETING

Principal Markets

Most poles are used by electric power, communications, and railway companies. These utilities purchase poles directly from producers or from commercial wood-preserving plants.

Nearly all white-cedar utility poles in the Northeast are sold by the producer directly to the consumer. These poles are generally used for rural line construction within the state they came from. Some are exported from Maine to Canada for similar use.

Red, shortleaf, and loblolly pine poles are usually produced or purchased by commercial wood-preserving plants, who in turn supply pole-using utilities.

Poles are commonly stock-piled both by treating plants and users. This helps to stabilize the pole market, in contrast to the fluctuating market for piling.

Specifications

The American Standards Association has published standard specifications and dimensions for each of the major pole species.[4] These specifications cover material requirements, dimensions, manufacturing requirements, and storage and handling for poles to be given preservative treatment. They are the official standards used by treating-plant and utility-company pole inspectors. They also serve as a production guide for pole producers in the region.

[4]Anonymous. American standard specifications and dimensions for wood poles. Amer. Standards Assoc. 14 pp., illus. New York. 1948.

Figure 4.--About half the poles and 15 percent of the piling produced in the Northeast are treated with preservatives. Above, poles being processed at a wood-preserving plant.

Below, treated poles are generally stockpiled. Piling, on the other hand, is usually cut only upon order.

In general, desirable pole species are moderately lightweight softwoods with high strength-weight ratios. Hardwoods are too heavy. Individual trees must be reasonably straight with gradual taper, free of splits, decay, and other unsound defects. Pole timber should also be fairly accessible and in adequate quantities to be harvested economically.

Pole requirements are similar to piling requirements. Sound, straight, clean, second-growth timber is required for both. However, each must have certain desirable characteristics that are of little importance in the other. In piling, good shock resistance is essential. In poles, light weight is important. Both of these qualities are obtained by proper choice of species. As a result, oak is widely cut for piling but is too heavy for utility poles; and white-cedar, a common pole species, is seldom used for piling because it lacks shock resistance. Red, loblolly, and shortleaf pines are moderate in weight as well as highly shock resistant; so they are in demand for both poles and piling.

Prices

Prices paid for utility-pole stumpage or delivered poles vary, as in the case of piling, with length and diameter of material, species, accessibility of stumpage, and distance to markets. In general, pole-stumpage prices run about the same as prices for piling stumpage. Roadside or delivered prices range about 10 percent below those for piling.

Like piling, utility-pole stumpage is sold by several units of measure. In northern Maine, stumpage is usually sold by the piece, and price depends on size of material. Pole operators generally truck their products to a railhead and sell on a per-piece f.o.b. car basis.

In southern Maine and New Hampshire, red pine utility-pole stumpage is sold by the board-foot, and payment is made on actual log scale (Blodgett or Maine log rule) or on the basis of a timber cruise. In Maryland, pine-pole stumpage is usually sold on a lump-sum basis along with sawtimber or piling stumpage.

At roadside, f.o.b. car, or delivered to the treating plant, utility poles are usually sold by the piece.

Tables 4 and 5 show prices of cedar and pine poles in Maine and New Hampshire, the major pole-producing states in the Northeast.

Table 4.--Cedar pole prices, Maine, 1950-1951

Size		Price per pole	
Length	Top diameter (d.i.b.)	Stumpage	Peeled f.o.b. car
Feet	Inches	Dollars	Dollars
20	5	$0.35	$ 5.00 to $ 8.00
25	6-8	.55	
30	6-7	.85	
30	8	1.10	9.50
35	6-7	1.40	12.00
35	8	1.65	14.00
40	6-7	2.05	18.00
40	8	2.20	20.00
45	6-8	2.75	22.00 to 24.00
50	6-8	3.30	25.00 to 30.00

Table 5.--Prices for unpeeled red pine poles in southern Maine and New Hampshire, 1950-51

Point of sale	Per 1,000 board feet, log scale	Per piece
Stumpage	$10-20	--
Roadside	40-50	$4-10
Delivered to treating plant	60-65	6-15

As with piling, it is difficult to compare pole prices directly with sawlog prices, and for the same reasons. For the Northeast in general, cedar poles average about 0.4 cubic foot per linear foot, and pine poles about 0.55 cubic foot per linear foot.

FURNACE POLES

The copper-refining plants located in and adjacent to New York City, Perth Amboy, N. J., and Baltimore, Md., burn approximately 50,000 green hardwood poles annually in the production of refined copper. When green poles are inserted into molten copper a chemical reaction takes place that removes oxygen and other impurities from the copper. Because of the low price offered for this material, most of it originates within a 25- to 35-mile radius of the refineries.

Furnace poles are generally cut by sawlog and piling operators in connection with or following such operations.

Operators either have direct contracts with users or supply contractors who do. Material is generally hauled directly by trailer truck from woods to refinery. A small amount is shipped by rail.

Size and quality specifications for furnace poles are liberal. In general, all hardwood species are accepted, although some users specify oak, maple, beech, and gum. Depending upon the storage facilities and yard equipment of the buyer, poles ranging from 25 to 45 feet long are used. Butt diameter should be at least 8 or 10 inches and top diameter 3 or 4 inches. There are no restrictions as to number, size, or condition of knots, splits, shake, or decay. Nor are straightness or taper important. The main requirement is that the wood be green.

Furnace poles are sold by the ton. The average pole weighs about 1/2 ton. Stumpage prices average $1.00 to $1.50 per ton. Truck-delivered material sells for $7.00 to $8.00 per ton at point of use. Rail delivery runs slightly more.

Although the furnace-pole market offers no great premium over the price for fuel wood, the industry does provide an outlet for much below-grade material that otherwise would be left in the woods. However, this advantage is sometimes offset by cutting of potential saw-timber or piling material for use as furnace poles.

PRODUCERS & DEALERS

A list of piling and pole producers and dealers in the Northeast was compiled during a survey of equipment and manpower requirements of forest-products industries in 1950-51.

This list (table 6) is presented as an aid to forest-land owners in marketing timber for piling and poles. This list may be incomplete. Omission of a producer or dealer from the list is not intentional; it means only that he was missed in the survey. On the other hand, inclusion of a producer or dealer in the list should not be taken as a recommendation or endorsement.

Table 6.--Piling and pole producers and dealers in the Northeast

Name	Location	Producer (P) or dealer (D)	Product
	CONNECTICUT		
Joseph Machnik	East Lyme	P	Piling
Alfred Smith	Lyme	P	Piling
Noyes Watrous	Mystic	P	Piling
	DELAWARE		
Lyndon Barr	Georgetown	P	Piling
George N. Butts	Wilmington	D	Piling
Forest Products Co.	Wilmington	D	Piling
Jennings & Jensen	Milton	P	Piling
S. Jones	Milton	P	Piling
Koppers Co.	Newport	D	Poles, piling
Murphy & Hayes	Harrington	D	Piling
Murphy & Hoey	Milford	P	Piling
C. E. T. Phillips & Sons	Laurel	P	Poles, piling
H. C. Priestly	South Bridgeville	P	Piling
Quillen Bros.	Harrington	P	Piling
G. E. Veazey	Georgetown	P	Piling
Ford Warrington	Laurel	P	Piling
Francis Wilson	Georgetown	P	Piling
	MAINE		
E. D. Bessey & Sons	Waterville	D	Poles
Howard Fuller	Portland	D	Piling
Maine White Cedar Co.	St. Francis	P	Poles
New England Pole & Treating Co.	Yarmouth	D	Poles
Northern White Cedar Pole Co.	St. Francis	P	Poles
T. C. Pingree	Wells	P	Poles
Thomas Pinkham	Fort Kent	P	Poles
Dana Richardson Piling Co.	Portland	D	Piling
Joseph Richards	Yarmouth	P	Piling
St. Regis Paper Co.	Whitneyville	P	Piling, poles
	MARYLAND		
J. Martin Apgar	Northeast	P	Piling
Apgar Piling Co.	Salisbury	P	Piling
William J. Bromley	Eden	P	Piling

(continued)

Table 6.--(continued)

Name	Location	Producer (P) or dealer (D)	Product
	M A R Y L A N D (continued)		
Lennie Burton	Cambridge	P	Piling
W. E. Burton	Cambridge	P	Piling
Clark Lumber Co.	Chesapeake City	P	Piling
Delaware Piling Co.	Snowhill, Berlin	P	Piling
Thomas M. Elbourn	Rockhall	P	Poles, piling
Chas. C. Freeland & Son	Baltimore	P	Furnace poles
Gladys George	Barton	P	Poles
Hitman Lumber Co.	Elkton	P	Piling
Hoskins Co.	Baltimore	P	Piling
Paul Jones	Snowhill	P	Poles, piling
Joslyn Manufacturing Co.	Baltimore	D	Piling
Koppers Company	Hagerstown	D	Poles, piling
Edgar Lambert	Edgewater	P	Fish-net poles, piling
H. K. Miller Lumber Co.	Chesapeake City	P	Piling
Louis Philips	Church Creek	P	Piling
Chester Russel	Elkton	P	Piling
S. & F. Lumber Co.	Hall	P	Piling, fish-net poles
Schofield Bros.	Cambridge	P	Piling
F. Nelson Smith	Bel Air	P	Fish-net poles, piling
Norman Travers	Cambridge	P	Piling
J. I. Wells Co.	Salisbury	P-D	Poles, piling
	M A S S A C H U S E T T S		
McQueston Lumber Co.	East Boston	D	Piling
M. R. Parsons	Wayland	P	Piling
	N E W H A M P S H I R E		
Charles Bickford	Sandwich	P	Piling
Archie Connoley	Londonderry	D	Piling
George Densmore	Conway	P	Piling
Donald Esty	Hebron	P	Piling
William Footer	Nashua	P	Piling
J. R. Jackson & Sons	Colbrook	P	Poles
Kennet Lumber Co.	Conway	P-D	Piling
Koppers Co.	Nashua	P-D	Piling, poles

(continued)

Table 6.--(continued)

Name	Location	Producer (P) or dealer (D)	Product
	NEW JERSEY		
Edgar H. Allen & Sons	Kennilworth	D	Piling
H. W. Best	Caldwell	P	Piling
Brown Timber Co.	Matawan	D	Piling, furnace poles
Herbert Burgess	Pennsgrove	P	Piling
R. J. Christopher	Allendale	P	Piling
Conover & Dwight	Atlantic Highlands	P	Piling
George Decker	Rockaway	P	Piling
Martin Dickson, Inc.	Port Elizabeth	D	Piling
Donatoni Bros.	Rockaway	P	Furnace poles, piling
East Jersey Lumber Co.	Metuchen	P	Furnace poles, piling
Fanwood Tie & Timber Co.	Fanwood	P	Piling
D. Francisco	Lambertville	P	Piling
D. L. Jennings	Menlo Park	P	Piling
Kruk Bros.	Ocean City	D	Piling
Paul Licardello	Swedesboro	P	Piling
William Liddle	Perth Amboy	D	Piling
Edward Lieberman & Sons	Crosswicks	P	Piling
W. R. Lyons	Woodport	P	Piling
Middlesex Piling Corp.	Metuchen	D	Piling
Nelson Piling & Lumber Co.	Port Newark	D	Piling
Nichols Bros.	Jersey City	D	Piling
M. Osipowich	Englishtown	P	Piling
C. M. Patterson	Perth Amboy	D	Furnace poles
Patterson Lumber Co.	Inlaystown	P	Piling
Potts Lumber Mill	Delanco	P	Piling
Edward Schiller	Lambertville	P	Piling
R. Scott	Cranbury	P	Piling
Serpico Bros.	Madison	P	Piling
William Skinner Lumber Co.	Dennisville	P	Piling
Susto and Teroni	Rockaway	P	Furnace poles, piling
Ten Eyck Bros.	Metuchen	P	Furnace poles, piling
Richard Ten Eyck	Metuchen	D	Piling
J. T. Ternay, Inc.	Rockaway	P	Piling
Daniel Thayer	Allendale	P	Furnace poles, piling
James White	Woodbridge	P	Furnace poles, piling
William Wunsch	Coytsville	P	Piling
	NEW YORK		
Browne & Bryan Co.	New York City	D	Piling
Curt Burnham	Westport	P	Poles
Eppinger & Russell Co.	New York City	D	Poles, piling

(continued)

Table 6.--(continued)

Name	Location	Producer (P) or dealer (D)	Product
N E W Y O R K (continued)			
George S. Fee	Nanuet	P	Piling
Bruce Gernon	Poughkeepsie	P	Piling
Hudson Valley Lumber Co.	Nanuet	P	Piling
W. Jamison	Peekskill	P	Piling
Mark LaRoe	Sugarloaf	P	Piling
W. S. Long	New York City	D	Piling
E. E. Pearce & Co.	New York City	D	Piling
Clarence Slesly	Schroon Lake	P	Poles
M. Stotenburg	Lackawanna	P	Piling
Daniel Van Dusen	Corning	P-D	Piling
H. B. Webb Lumber Co.	Bernhards Bay	P	Piling
P E N N S Y L V A N I A			
Eppinger & Russell Co.	Philadelphia	D	Poles, piling
Carl Hill	Ulster	P	Piling
Industrial Lumber Co.	Philadelphia	D	Piling
Koppers Co.	Bradford, Pittsburgh	D	Poles, piling
Henry Levis & Co.	Philadelphia	D	Piling
James Mitchell	Meadville	P	Piling
V E R M O N T			
Amos Boulrisse	Lyndonville	P	Poles
Leavitt Leonard	Pittsford	D	Poles
Frank Marang	Barton	P	Poles
Harold Webster	Whiting	P	Poles

CONCLUSIONS

Sharp local fluctuations in market demands for piling create a rather unstable price pattern. Needs for new construction can be anticipated with some accuracy, but piling replacements in marine installations are often needed on very short notice. It is quite natural that any large order for piling of the longer lengths, to be delivered on short notice, will carry a premium price.

Because of fabulous prices occasionally paid for piling, many people think that piling material always sells for much more than sawlog material of the same size and quality. This may be true for the longest lengths, which are scarce. But the shorter, more abundant piling material brings little more than good sawlogs.

From the standpoint of the timberland owner, whether he is farmer or timber operator, the decision to sell or cut piling material from a stand should not be made without thorough study of the timber itself. Cutting of well-formed, fast-growing oak for piling may result in a high-grading operation that will leave only low-quality material and inferior species for the next harvest. Unless a premium is paid that will balance the future value of these trees as saw timber, it appears undesirable to make such a cutting.

In contrast to this situation, removing selected pine piling material from an even-aged pine stand may help the remaining stand to grow faster or prepare a seedbed for the next generation of pine. So it is impossible to say in a general way whether a stand should be cut for piling. County, State, and consulting foresters are available in most localities to advise woodland owners regarding such problems.

Piling supplies in northeastern forests are dwindling. More and more piling is being imported from the South and West. If this trend continues, there may be a gradual rising of piling prices.

Markets for pine poles appear to remain stable mostly because demands can be anticipated and ample stockpiles are maintained. Competition from southern and western poles also tends to hold the prive level.

Because of the increased demand for longer poles, the cedar-pole business in the Northeast will doubtless continue to decline. Although many consumers in Maine prefer the native cedar, they cannot get enough of the longer lengths to satisfy their demands; so they have turned to southern pine and western cedar. Development of a cedar post market would perhaps relieve the situation and bring the industry back onto firmer footing.

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